

FIG. 1

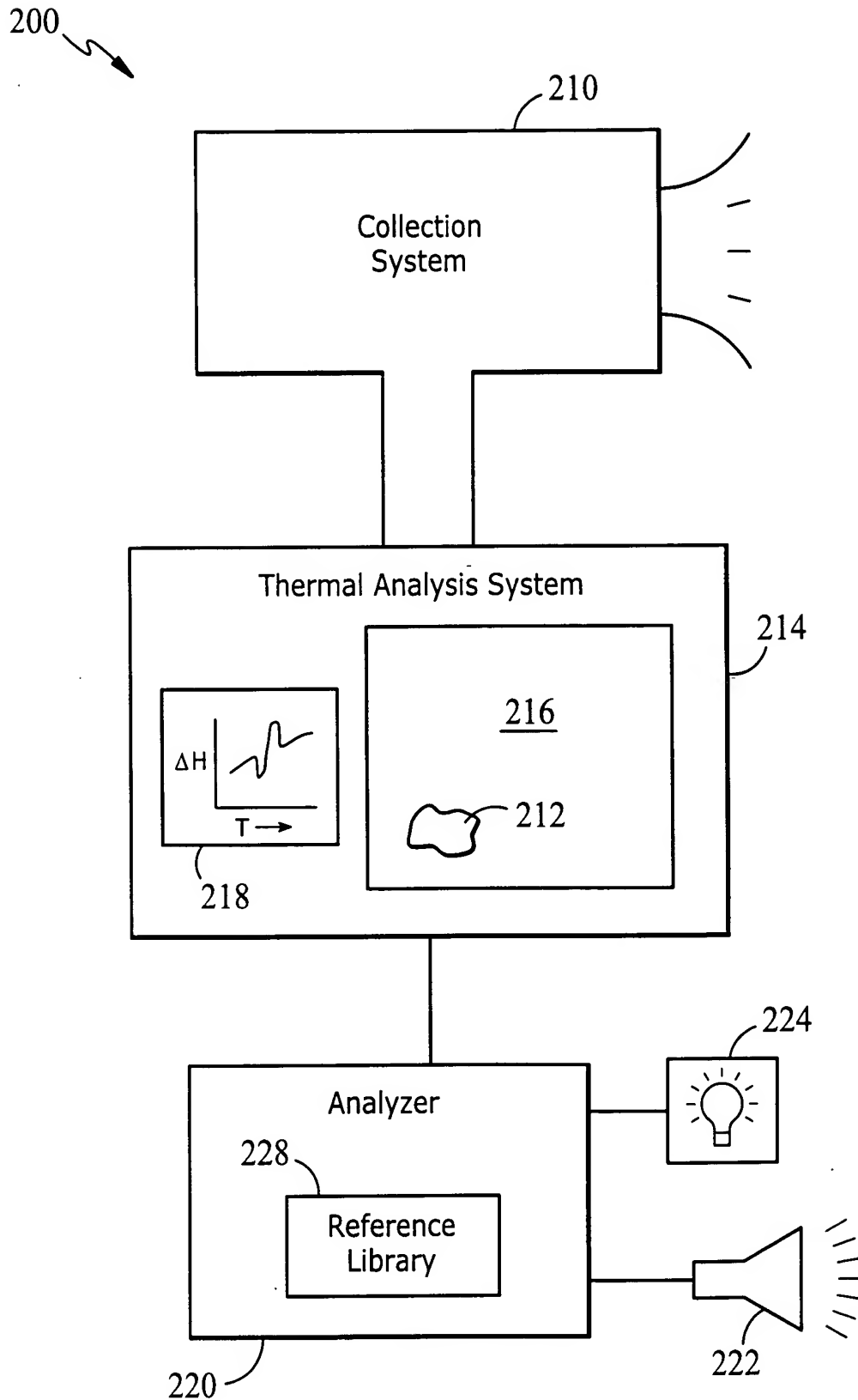


FIG. 2

Investigator(s): William A. Curby et al.  
ANALYSIS FOR DETECTION AND  
IDENTIFICATION OF EXPLOSIVES AND OTHER  
CONTROLLED SUBSTANCES

Sample: Charcoal  
Size: 0.0400 mg  
Method: 20°C/min  
Comment: N2=50 mL/min

DSC

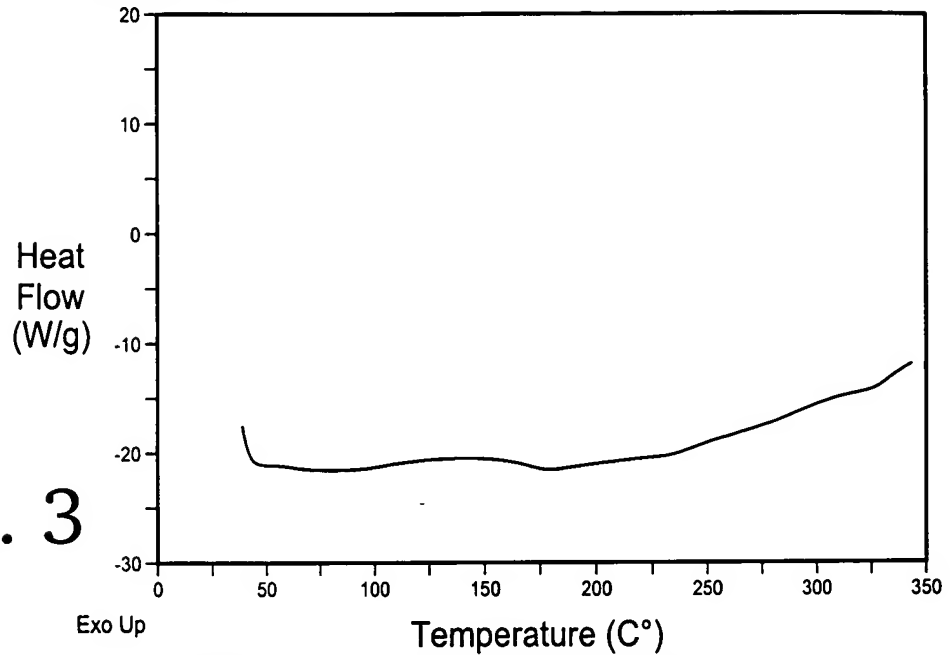


FIG. 3

DSC thermogram of charcoal, sample weight is 0.04 mg

Sample: Isopropanol  
Size: 0.600 mg  
Method: RT to 350°C at 20°C/min

DSC

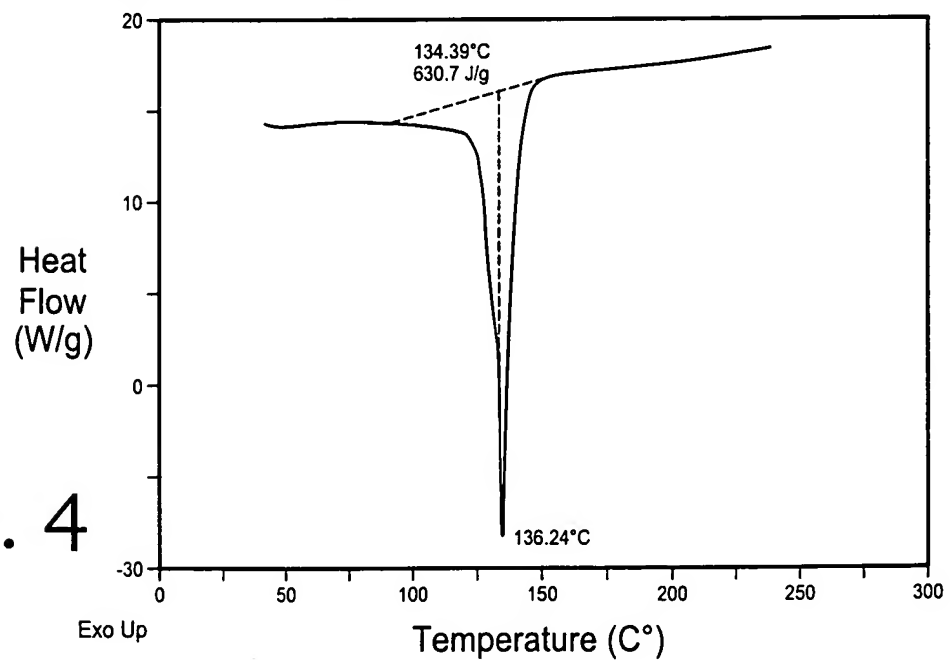
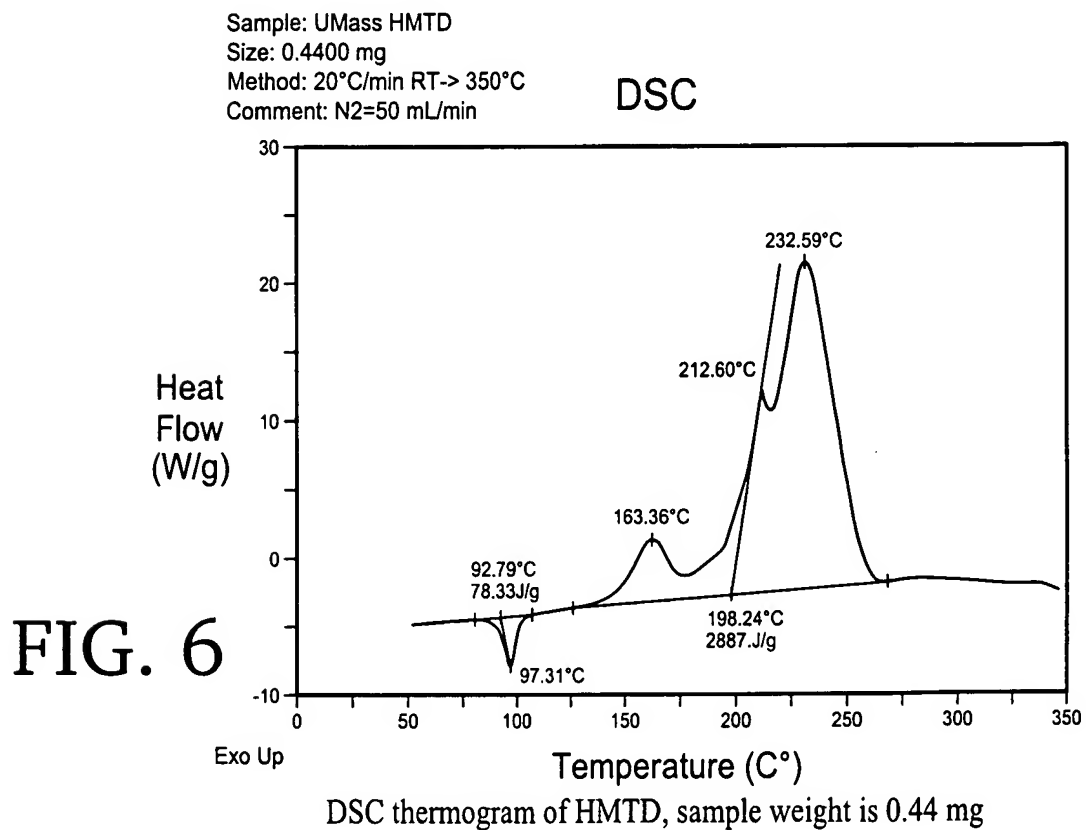
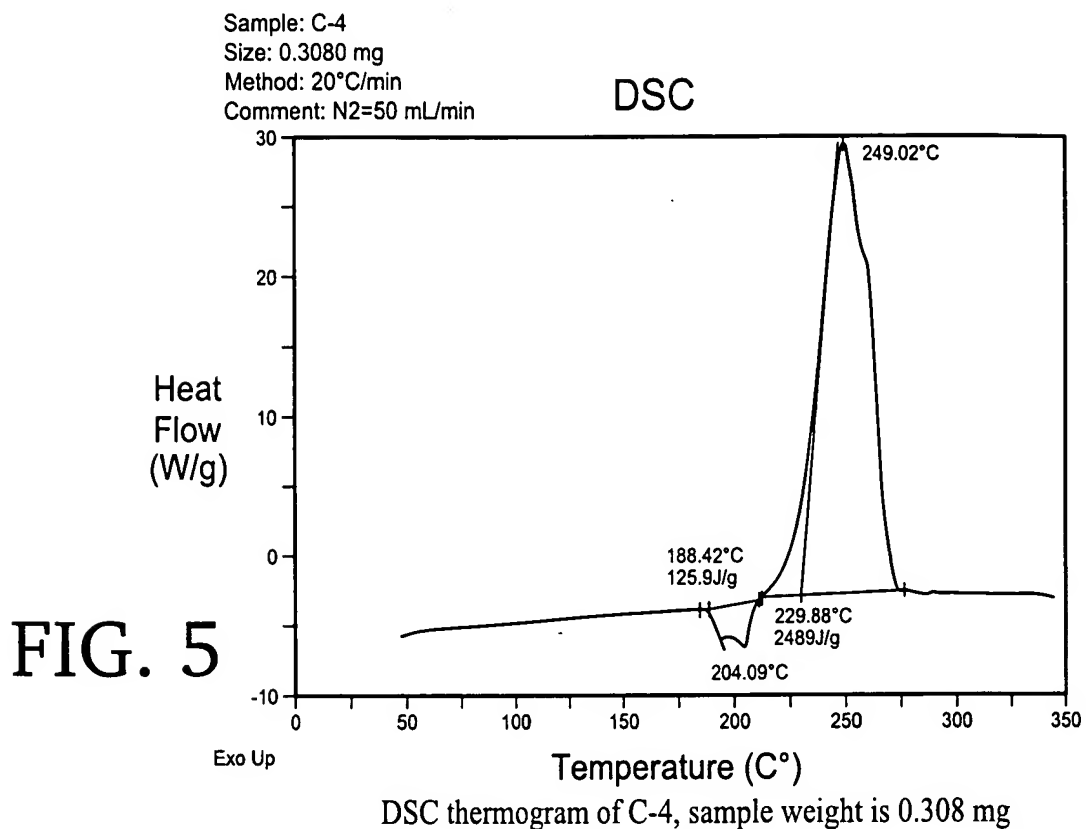


FIG. 4



Applicant(s): William A. Curby et al.

THERMAL ANALYSIS FOR DETECTION AND  
IDENTIFICATION OF EXPLOSIVES AND OTHER  
CONTROLLED SUBSTANCES

Sample: UMass DADP  
Size: 0.6990 mg  
Method: 20°C/min RT->350°C  
Comment: N2=50 mL/min

DSC

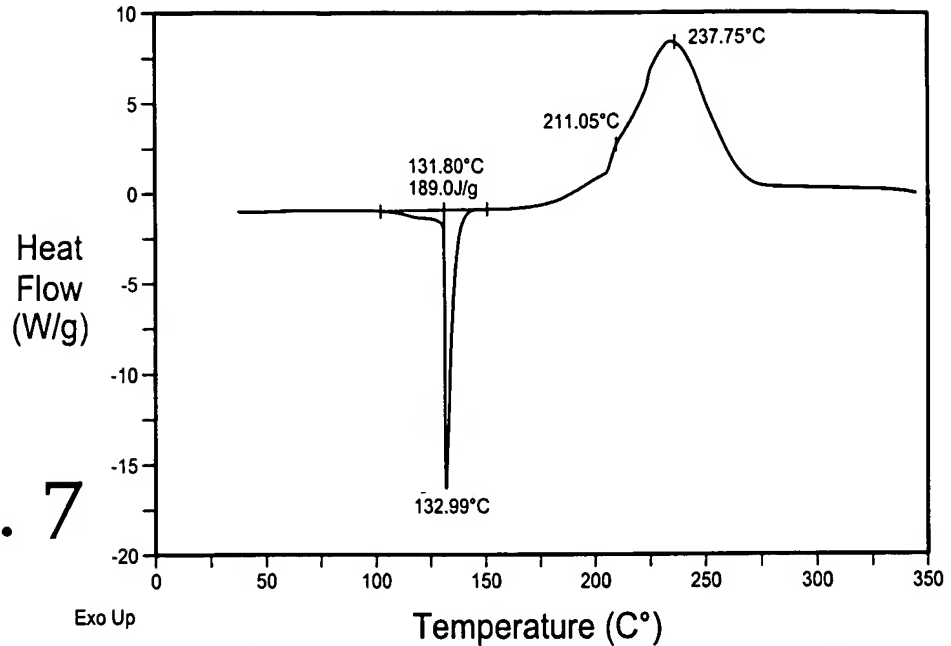


FIG. 7

Sample: UMass HMTD  
Size: 0.4400 mg  
Method: 20°C/min RT-> 350°C  
Comment: N2=50 mL/min

DSC

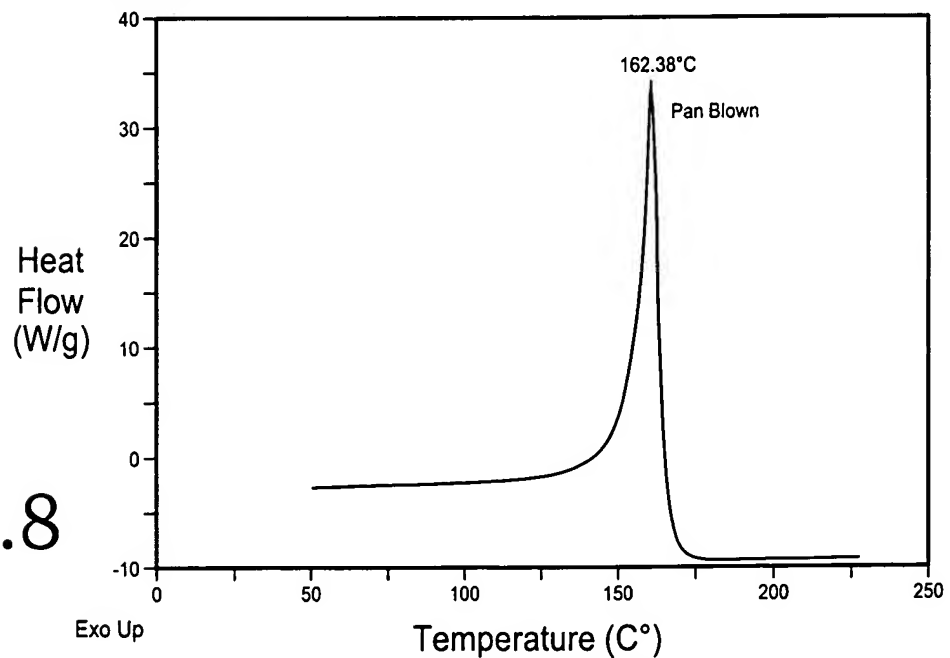


FIG. 8

Sample: UMass Ammonium Nitrate  
Size: 0.0900 mg  
Method: 20°C/min RT->400°C  
Comment: N2=50 mL/min

DSC

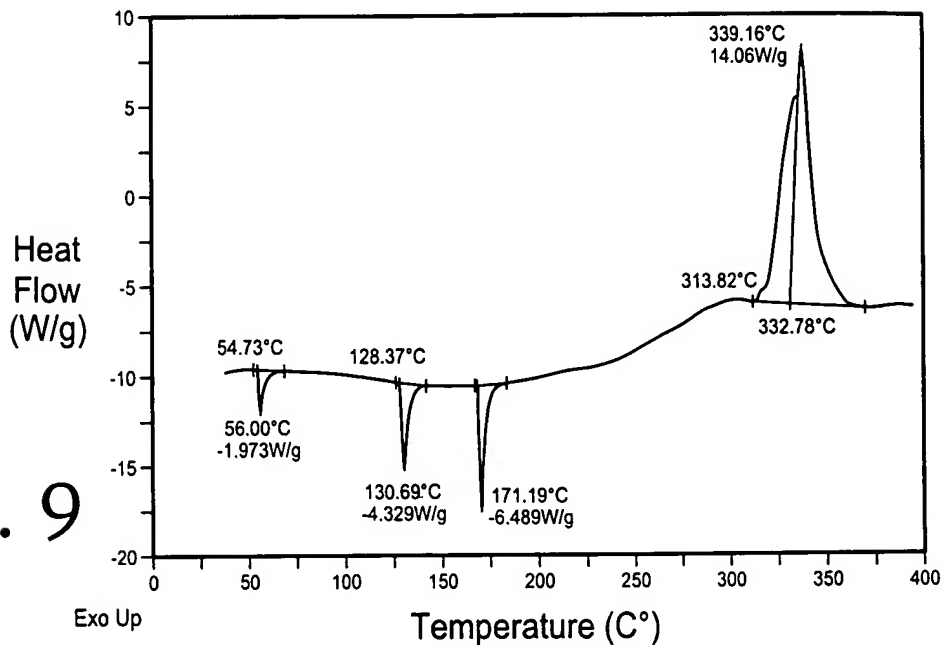


FIG. 9

DSC thermogram of Ammonium Nitrate, sample weight is 0.09 mg

Sample: UMass Urea Nitrate  
Size: 0.2110 mg  
Method: 20°C/min  
Comment: N2=50 mL/min

DSC

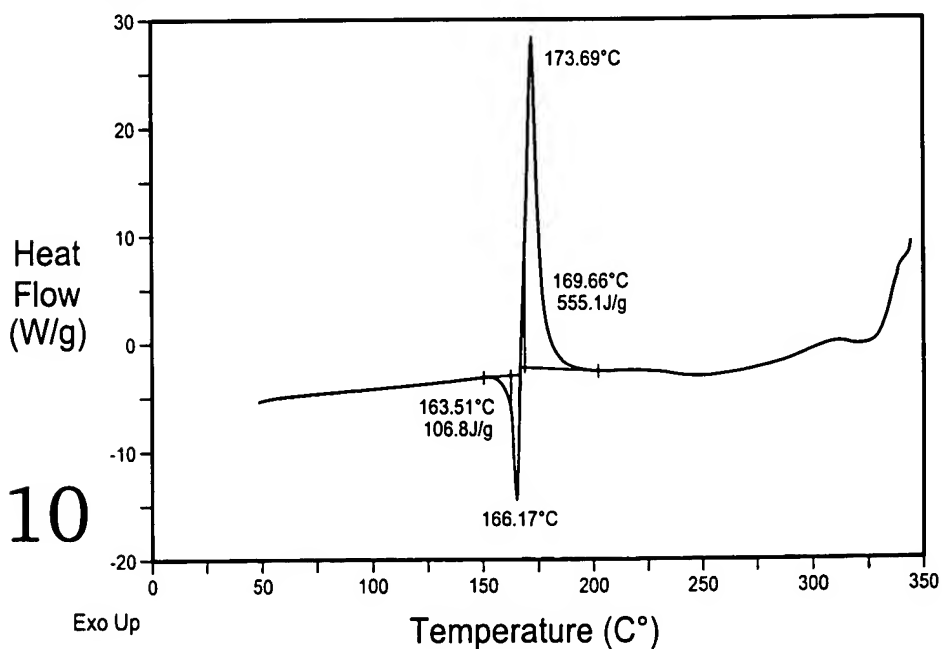


FIG. 10

DSC thermogram of Urea Nitrate, sample weight is 0.211 mg

Sample: Ammonium Perchlorate  
Size: 0.444 mg  
Method: 20°C/min  
Comment: N2=50 mL/min

DSC

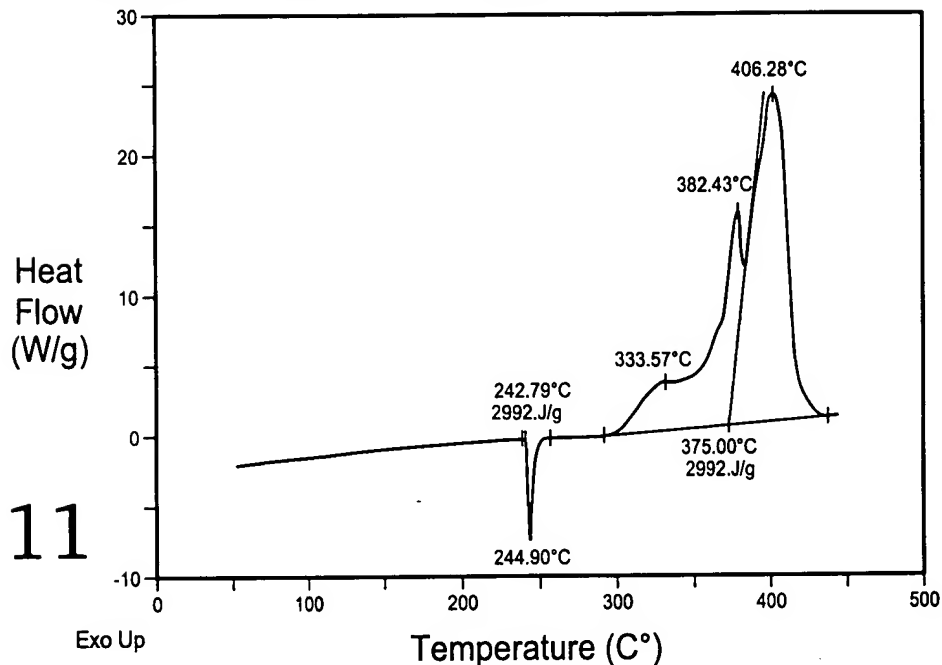


FIG. 11

DSC thermogram of Ammonium Perchlorate, sample weight is 0.444 mg

Sample: Benzoyl Peroxide  
Size: 0.071mg  
Method: 20°C/min  
Comment: N2=50 mL/min

DSC

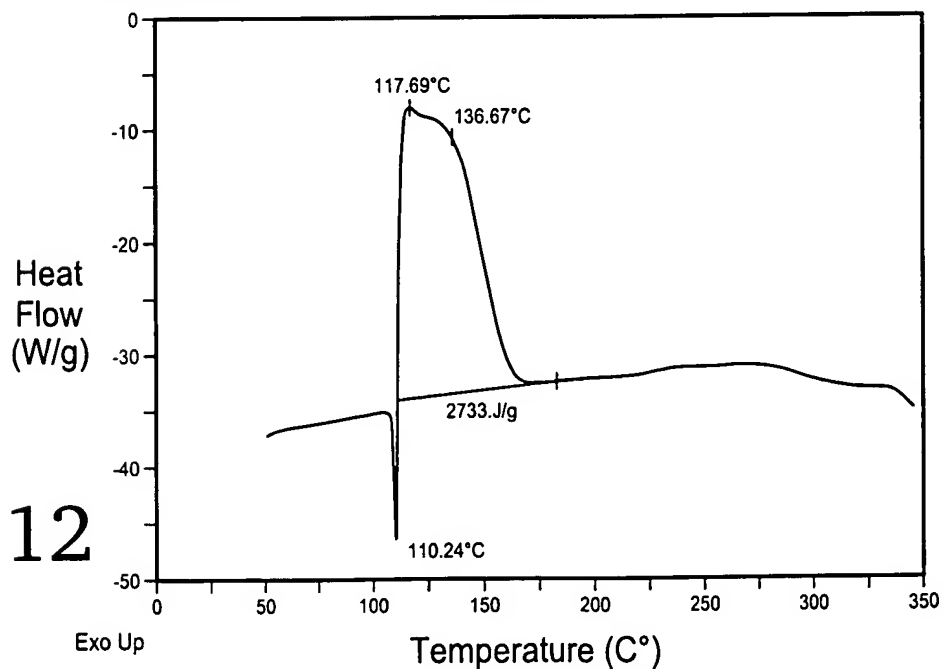


FIG. 12

DSC thermogram of Benzoyl Peroxide, sample weight is 0.071 mg

Sample: UMass RDX  
Size: 0.4000 mg  
Method: 20°C/min RT-> 350°C  
Comment: N2=50 mL/min

DSC

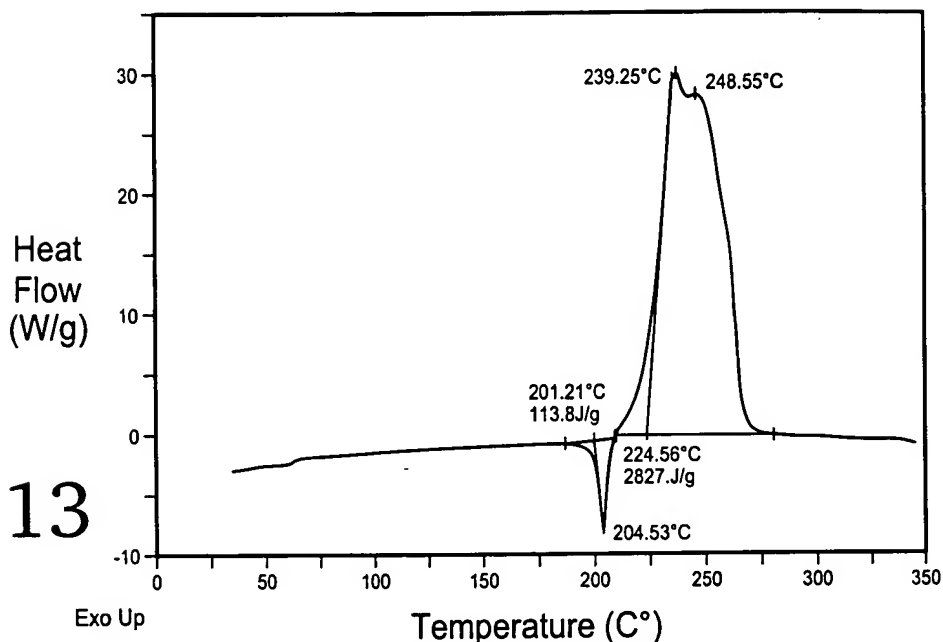


FIG. 13

DSC thermogram of RDX, sample weight is 0.400 mg

Sample: UMass FFF9  
Size: 0.4890 mg  
Method: 20°C/min RT->350°C  
Comment: N2=50 mL/min

DSC

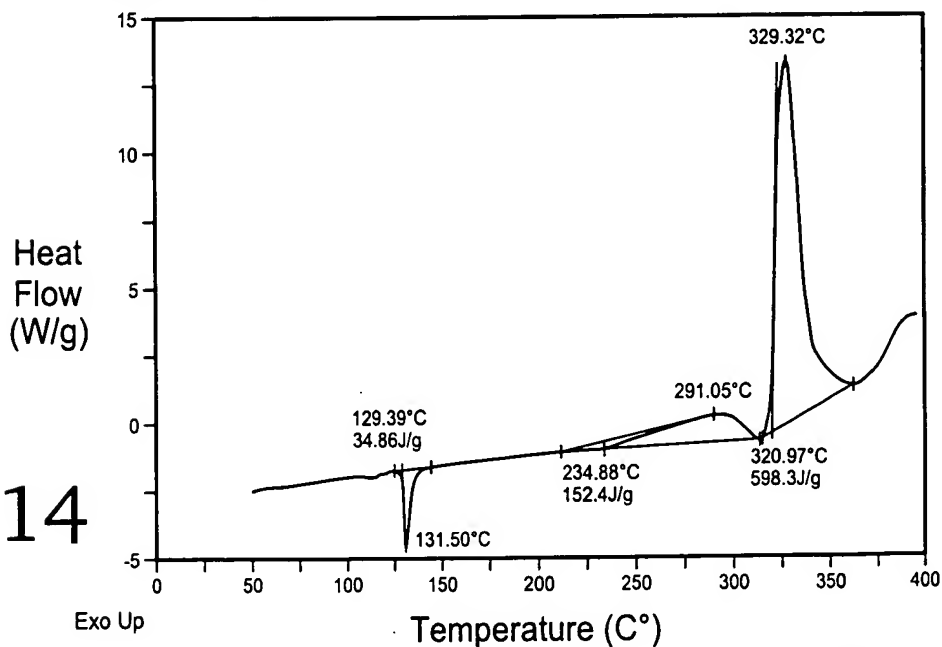


FIG. 14

DSC thermogram of Black Powder, sample weight is 0.489 mg



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Sample: UMass Remington  
Smokeless  
Size: 0.0710 mg  
Method: 20°C/min RT->350°C  
Comment: N2=50 mL/min

DSC

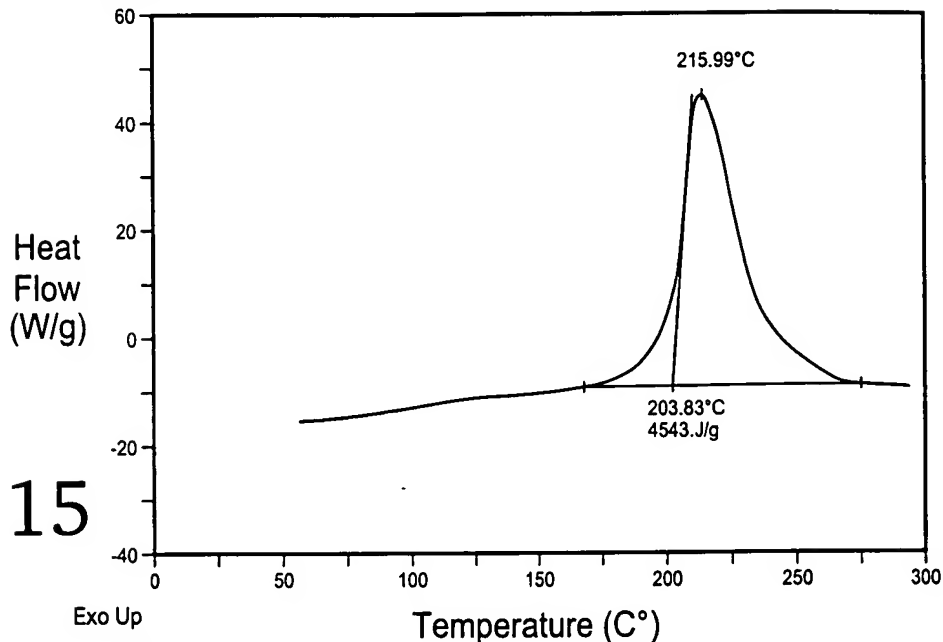


FIG. 15

DSC thermogram of Smokeless Remington,, sample weight is 0.071 mg

Sample: UMass Military Spec Ammo.  
Size: 0.2150 mg  
Method: 20°C/min RT-> 350°C  
Comment: N2=50 mL/min

DSC

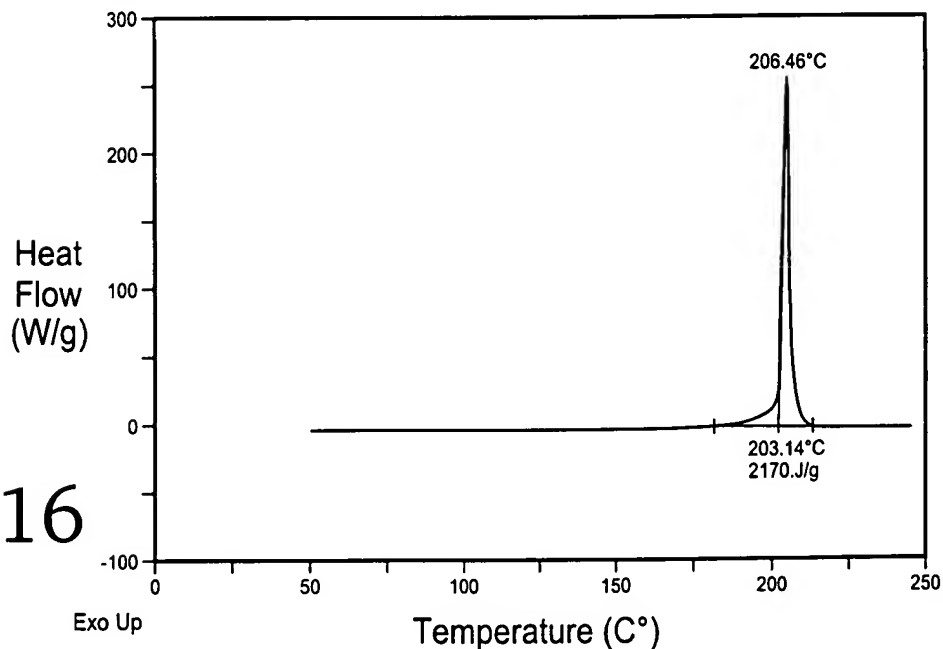


FIG.16

DSC thermogram of Mil. Spec. Ammo., sample weight is 0.215 mg

Sample: 2,3-Dimethyl-2,3-dinitrobutane  
Size: 0.1840 mg  
Method: 20°C/min  
Comment: N2=50 mL/min

DSC

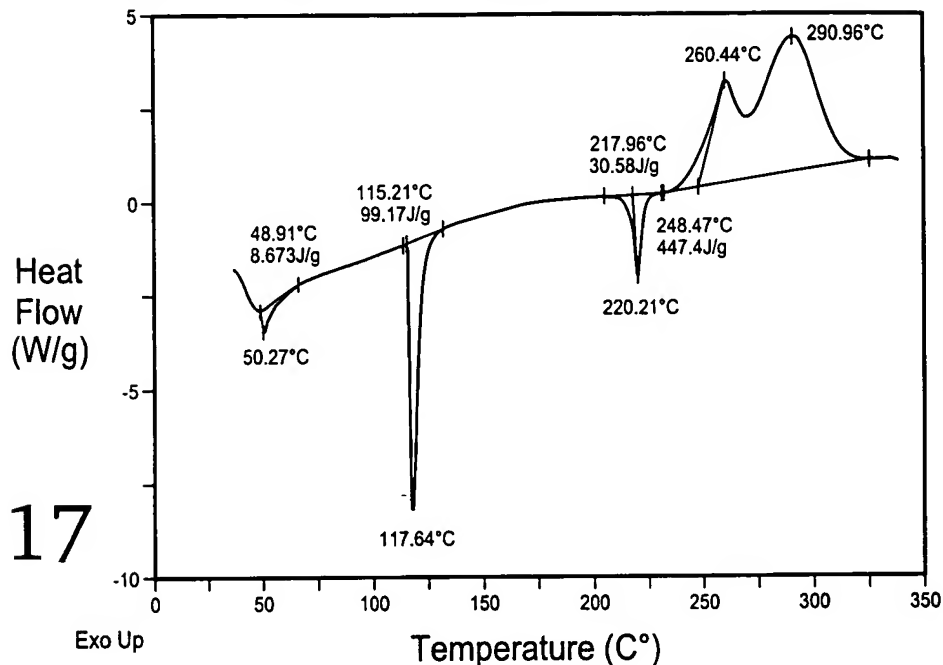


FIG. 17

DSC thermogram of 2,3-dimethyl-2,3-dinitrobutane,  
sample weight is 0.184 mg

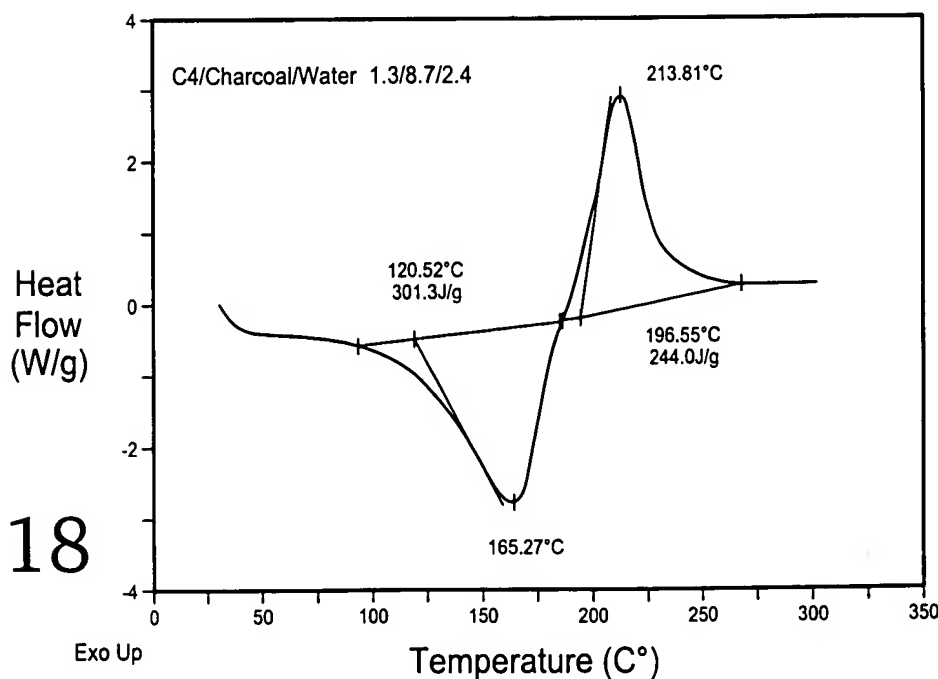
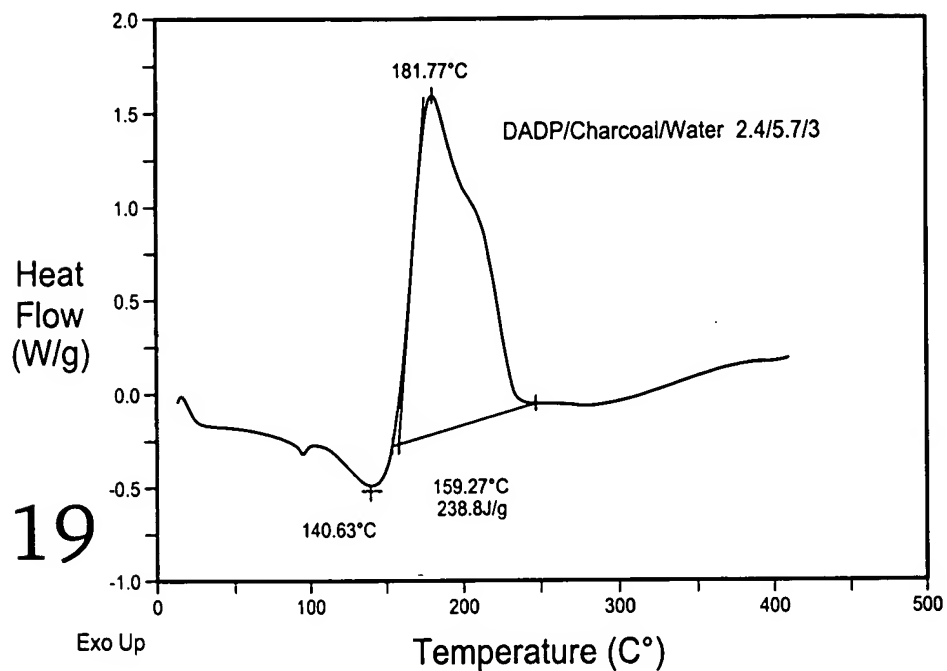


FIG. 18

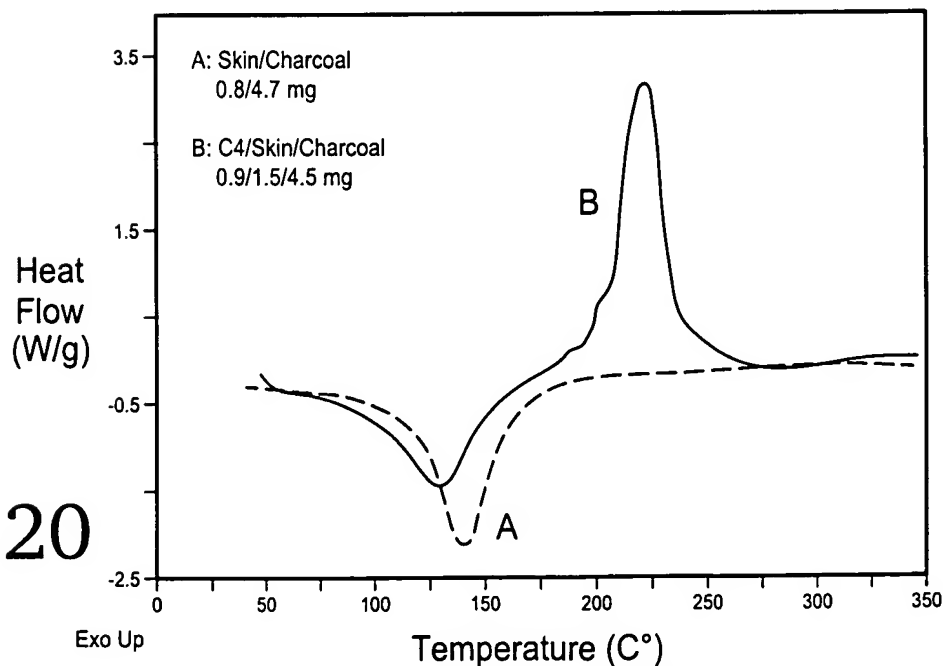
DSC thermogram of C4/Water/Charcoal, sample weight is 12.3 mg

FIG. 19



DSC thermogram of DADP/Water/Charcoal, sample weight is 11.1 mg

FIG. 20

DSC thermogram for Charcoal/Skin Fragments, and for  
Charcoal/Skin/C4 mixture

Applicant(s): William A. Curby et al.

THE ANALYSIS FOR DETECTION AND  
IDENTIFICATION OF EXPLOSIVES AND OTHER  
CONTROLLED SUBSTANCES

Sample: RDX from CHCL

Size: 0.0000 mg

Method: 25°C to 300°C @ 5 C/s

Comment: 232-3; 5 C/s; endo up; bk sub

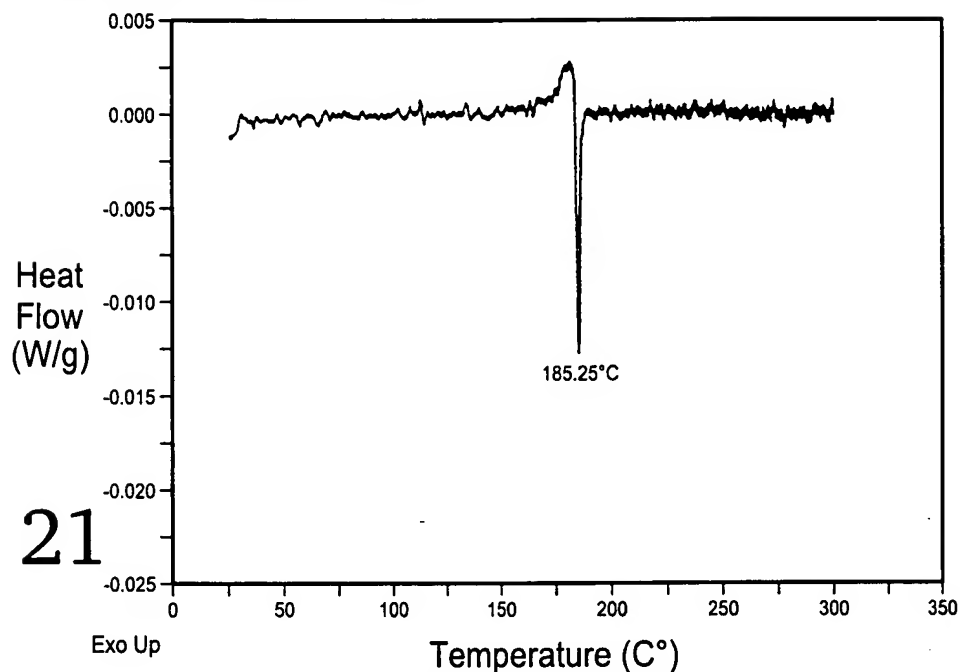
 $\mu$ TA

FIG. 21

Sample: TATP

Size: 0.0000 mg

Method: 25.000°C to 301.000°C @ 5

Comment: 232-3; 5 C/s; endo up; bk sub

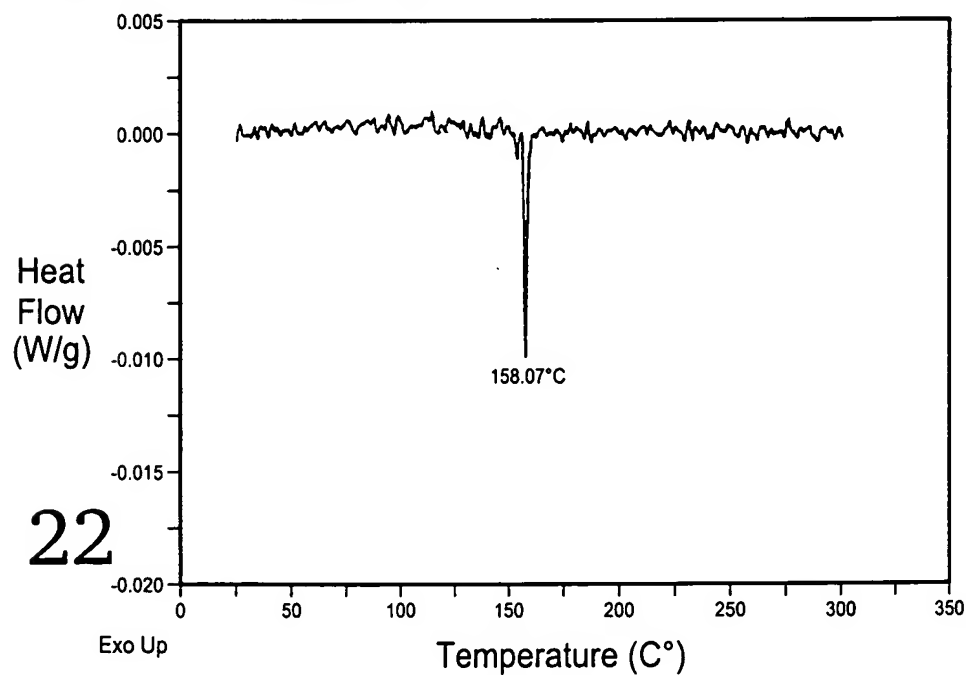
 $\mu$ TA

FIG. 22

Analyst(s): William A. Curby et al.

THERMAL ANALYSIS FOR DETECTION AND  
IDENTIFICATION OF EXPLOSIVES AND OTHER  
CONTROLLED SUBSTANCES

Sample: HMTD

Size: 0.0000 mg

Method: 25°C to 300°C @ 5 C/s

Comment: 232-3; 5 C/s; endo dn; bk sub

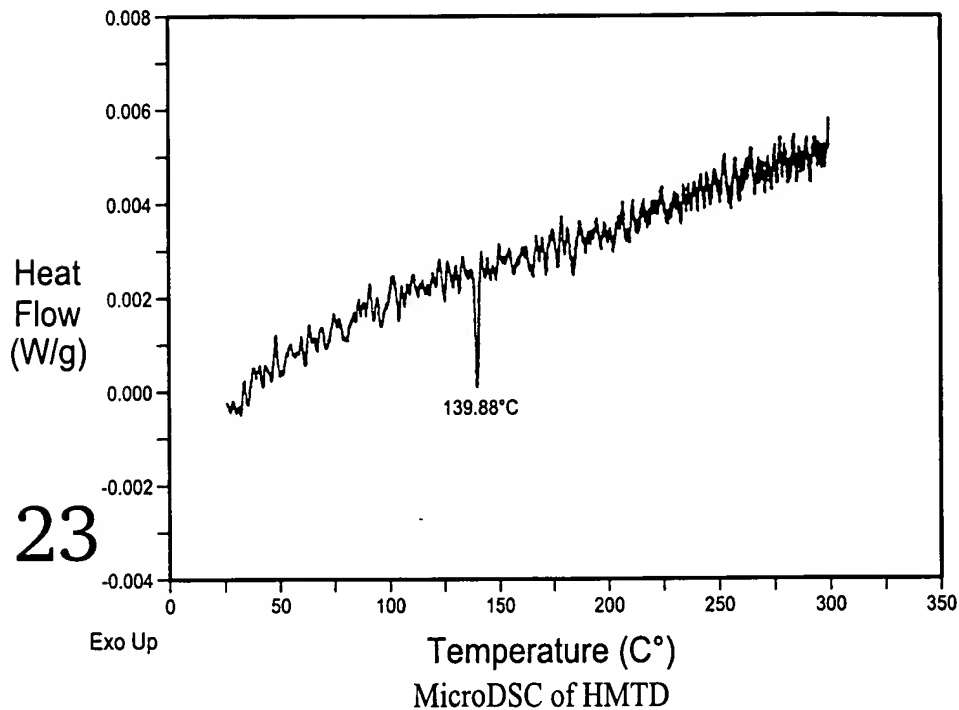
 $\mu$ TA

FIG. 23

Sample: RDX from CHCL

Size: 0.0000 mg

Method: 25°C to 300°C @ 25 C/s

Comment: 232-3; 5 C/s; endo up; bk sub

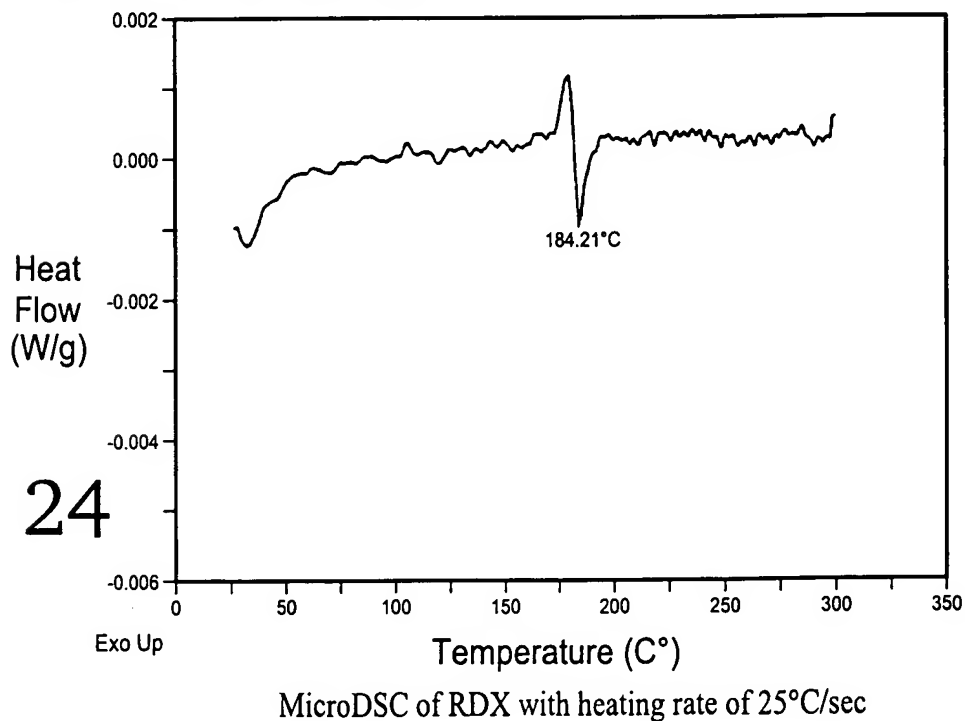
 $\mu$ TA

FIG. 24

Applicant(s): William A. Curby et al.  
 THERMAL ANALYSIS FOR DETECTION AND  
 IDENTIFICATION OF EXPLOSIVES AND OTHER  
 CONTROLLED SUBSTANCES

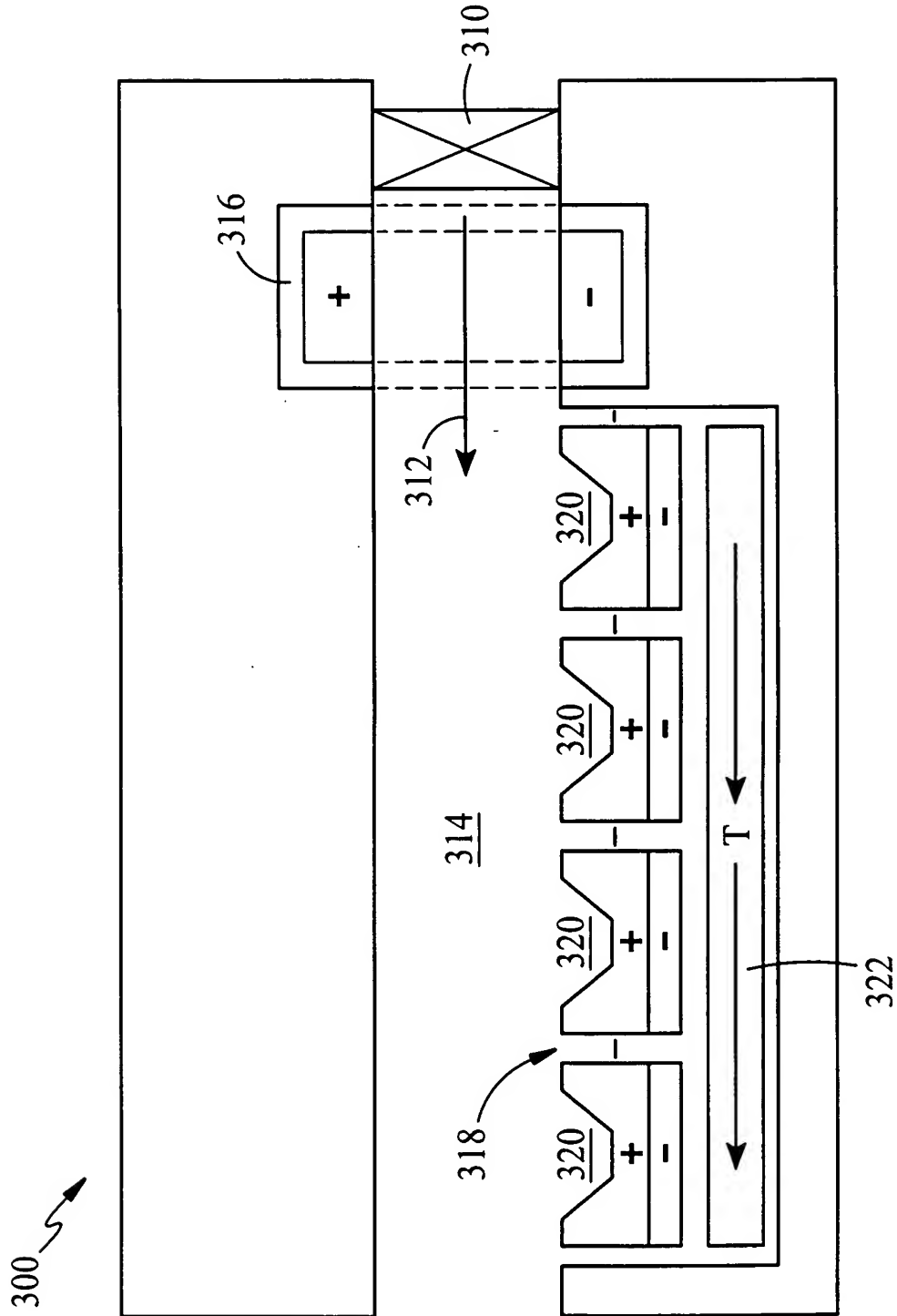


FIG. 25

Investigator(s): William A. Curby et al.  
THERMAL ANALYSIS FOR DETECTION AND  
IDENTIFICATION OF EXPLOSIVES AND OTHER  
CONTROLLED SUBSTANCES

Sample: Sugar  
Size: 0.071 mg  
Method: 20°C/min  
Comment: N2=50 mL/min

DSC

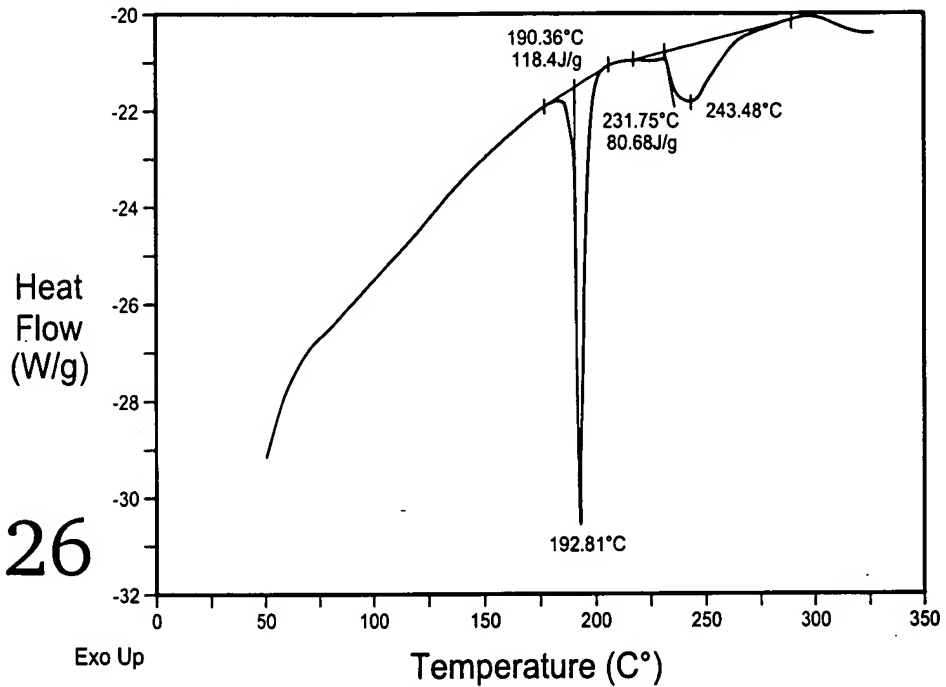


FIG. 26

Sample: UMass Caffeine  
Size: 0.9040 mg  
Method: 20°C/min  
Comment: N2=50 mL/min

DSC

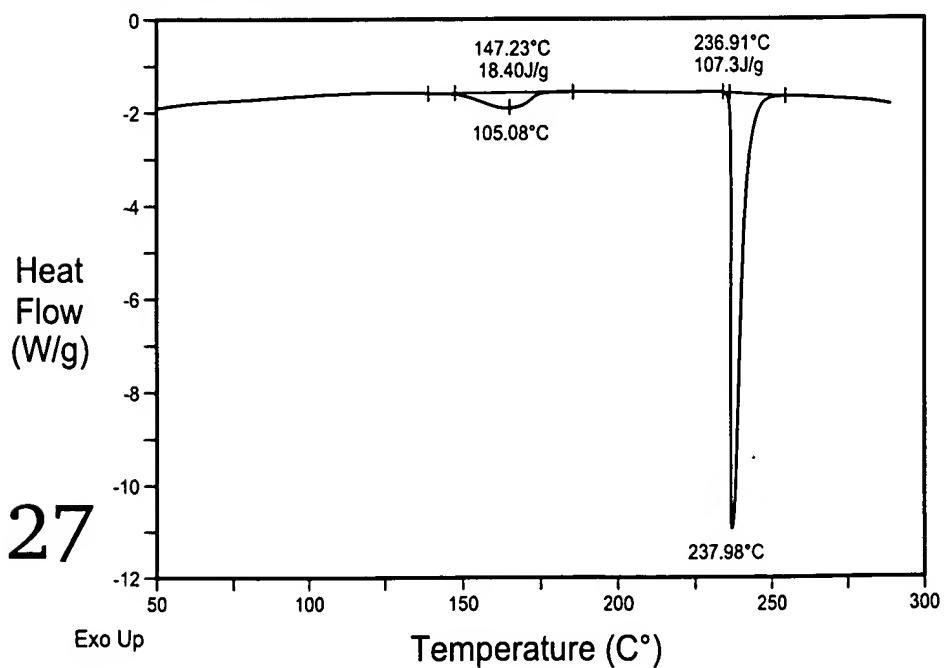


FIG. 27

Sample: UMass Bupivacaine  
Size: 0.3120 mg  
Method: 20°C/min  
Comment: N2=50 mL/min

DSC

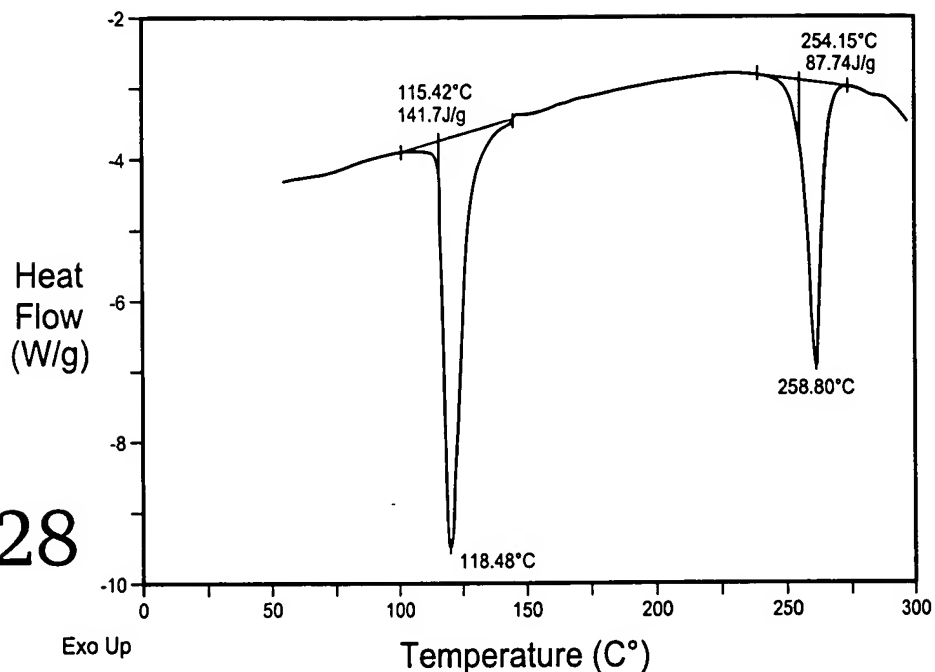


FIG. 28

Sample: UMass Tetracaine  
Size: 0.5810 mg  
Method: 20°C/min  
Comment: N2=50 mL/min

DSC

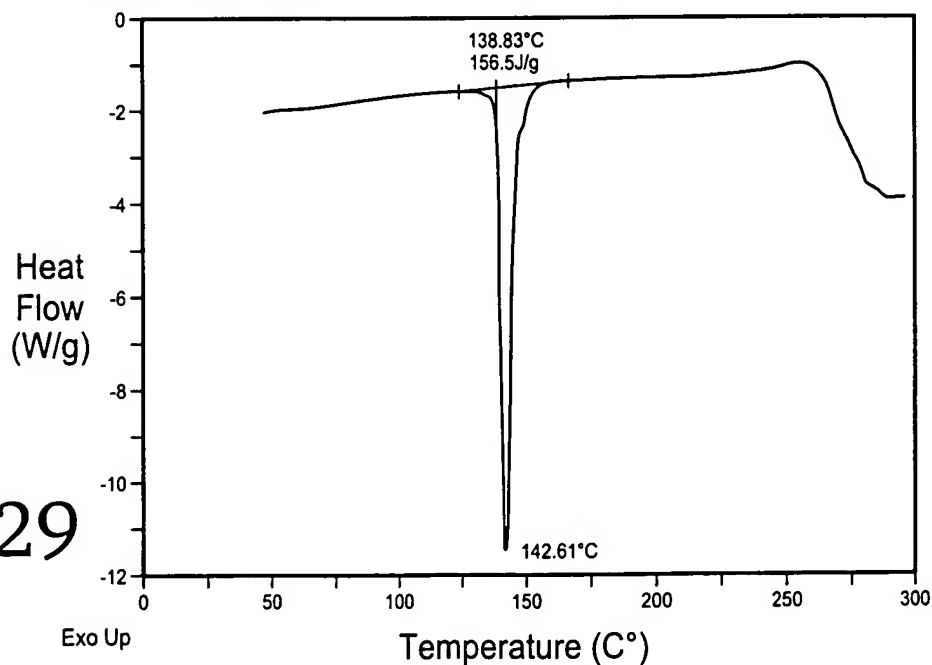


FIG. 29

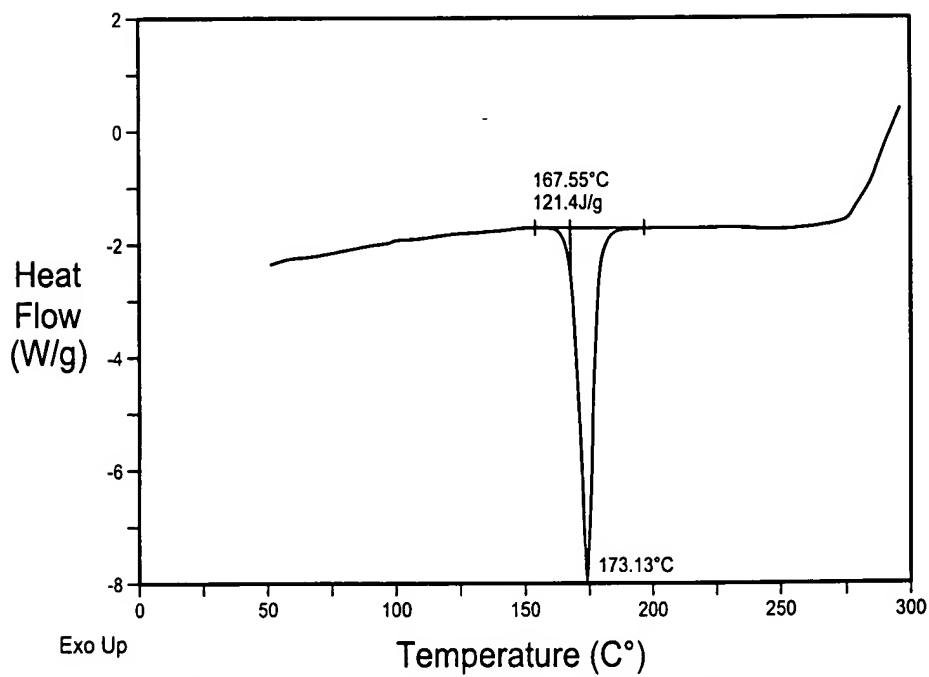


Applicant(s): William A. Curby et al.

THERMAL ANALYSIS FOR DETECTION AND  
IDENTIFICATION OF EXPLOSIVES AND OTHER  
CONTROLLED SUBSTANCES

Sample: UMass Prilocaine  
Size: 0.4400 mg  
Method: 20°C/min  
Comment: N2=50 mL/min

DSC



DSC thermogram of Prilocaine, sample weight is 0.44 mg

FIG. 30